

## ABSTRACT

The system and method of the present invention establishes a communication link between a user equipment (UE) and a base station in a communication system having a plurality of base stations which each transmit a common primary synchronization code (PSC) in a primary synchronization channel in conjunction with a base station specific secondary synchronization code (SSC) within a system frame, which receives with the UE an input signal including the PSC and SSC from at least one of the base stations. The UE analyzes the input signal to detect any received PSCs within a selected time period which has duration corresponding to the length of a system frame and determining a relative location of a strongest PSC within the selected time period. The input signal is then processed to remove the PSC from at least the determined PSC location. A secondary synchronization code (SSC) is then detected for the determined location from the processed signal. The communication link is then established using the detected SSCs.